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HOUSE-OVERCROWDING,

AND

MORTALITY IN GLASGOW.

BY

WILLIAM HOLMS,

GLASGOW:

HN SMITH & SON, 70 ST. VINCENT STREET.

1869.

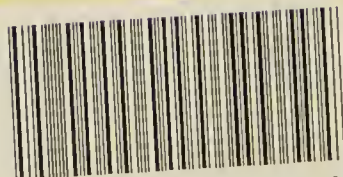
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PREFACE.

IN compliance with numerous requests, I am induced to publish, in the form of a pamphlet, the substance of several letters which recently appeared in the *Glasgow Herald*, on "House-Overcrowding and Mortality in Glasgow." I do so the more willingly, as the condition of that great and comparatively helpless class which forms an intermediate stratum between the respectable working classes and our pauper population, has a most important influence on the moral and sanitary condition, not only of this, but of every great city in the empire, and peculiarly demands the earnest consideration of a community, which has so long tolerated, and now suffers so much from, overcrowding, and the consequent physical degradation and excessive mortality which, unhappily, are amongst the characteristics of this portion of our population.

An Appendix and several Notes contain some additional information, which, I trust, may be found interesting.

WILLIAM HOLMS.

9 PARK CIRCUS,
GLASGOW, 25th August, 1869.





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HOUSE-OVERCROWDING.

HAVING read with much interest the various statements which have recently appeared with reference to the exceptionally high death-rate that has prevailed in Glasgow for several months, and believing that sufficient prominence had not been given to what, I venture to think, are the great causes not only of this excessive mortality, but also of that high death-rate for which, during many years, this city has unhappily been distinguished,—namely, overcrowding and want of ventilation,*—I determined to explore some of its worst localities, in order to learn something of the mode of life of that numerous class which, gaining a precarious livelihood from day to day, and ever verging upon pauperism, forms a social stratum, the condition of which is a disgrace to our civilization, and a reproach to our humanity.

Accompanied by the police and sanitary inspectors of the district—without whose obliging assistance I must have failed in my

* Mr. Chadwick, in his report on the Sanitary Condition of the Labouring Classes of Great Britain, gives the following very striking example of the evils resulting from want of ventilation, and also of the manner in which many of the badly constructed dwellings of the labouring poor might, at a moderate cost, be rendered comparatively healthy. He says, there was attached to one of the factories in Anderston, Glasgow, “an assemblage of dwellings for the work-people, called, from its mode of construction, and the crowd collected in it, the Barracks. This building contained 500 persons; every room contained one family. The consequence of this crowding of the apartments, which were badly ventilated, and the filth, was, that fever was scarcely ever absent from the building. All attempts to induce the inmates to ventilate their rooms were ineffectual. The proprietors of the work, on the recommendation of Mr. Fleming, a surgeon of the district, fixed a simple tin tube of two inches diameter into the ceiling of each room; these tubes were led into one general tube, the extremity of which was inserted into the chimney of the factory furnace. By the perpetual draught thus produced upon the atmosphere of each room, the inmates were compelled, whether they would or not, to breathe pure air. The effect was, that during the ensuing eight years fever was scarcely known in the place.”

This mode of ventilation has recently been successfully applied in one of the large public works in Glasgow. In a large room where, from the number of persons employed, and amount of gas consumed, the atmosphere—especially in the evening—was rendered impure, a pipe 6 inches in diameter was fixed in the ceiling, the other end being led into the factory stalk-vent; the immediate result was a purer atmosphere.

inquiries—I visited about fifty dwellings; commencing at half-past 10 o'clock, p.m., and completing my round of visits about 3 o'clock of the following morning.

With one exception, we were received by the occupants of the various houses with an amount of civility which surprised me, considering the very unseasonable hour we had chosen to break in upon their repose.

That the deficiency in the amount of air to each inmate of the houses visited may be better understood, it should be borne in mind, that from 500 to 600 cubic feet is usually regarded as the minimum quantity for an adult. The inspectors of prisons in England recommend not less than 1000 cubic feet “for every prisoner,” as being “essential to health and ventilation.” In those houses which have been ticketed by order of the magistrates, the required allowance is only 300 cubic feet for each inmate. I presume that it was found necessary to be content with this most inadequate allowance, as otherwise more than half of the inhabitants of those dwellings must have been dislodged and driven to the streets. I shall now briefly refer to some of the houses which I saw. We proceeded to 157 Bridgegate. The first house we entered consisted of a kitchen and two small rooms, the former about 14 feet long, 12 feet wide, and $7\frac{1}{2}$ feet high,—equal to 1260 cubic feet of air space. Here were seven adults and one child. The rooms were each about 10 feet long and 6 feet wide, equal to 450 cubic feet. In each of them we found four labouring men asleep. As the doors and windows were closed, the atmosphere was so sickening as to be almost intolerable. In the same close we found fourteen adults in a house with 2254 cubic feet; and on the upper floor, a two-roomed dwelling ticketed 1581·5—the former number indicating the cubic contents of the house, the latter figure denoting the number of adults permitted by the police to sleep in the premises. In this miserable dwelling we found a poor old tailor, who, with his family, slept at night in the same apartment in which he worked during the day; while a still smaller room was let to lodgers, the total occupants being seven adults and six children. We next went to 147 Bridgegate, which is a long, narrow, dark, ill-ventilated close. Here we found a house of one apartment, ticketed 1392·4, in which were ten men and women. I need scarcely say that the air was most offensive and unwholesome. In another one-roomed house, ticketed 797·2, we found four adults and two children. We next visited No. 11 St. Mar-

garet's Place, off Bridgegate. The first house we entered appeared to have concentrated all the evils likely to produce disease. It was dark and dirty; and although ticketed 1643·5, contained seven adults and seven children; most of them lying on the floor, with no other bed clothing than the clothes they were in the habit of wearing during the day: the excuse made for this overcrowding was, that the lodgers were people who had been turned out of their houses owing to the formation of the Union Railway; and being unable to get accommodation elsewhere at a suitable rent, had taken one of the two apartments in this wretched dwelling.

Our next visit was to the Back Wynd, off Trongate, where we found another Union Railway family huddled together, as lodgers, with the regular occupants of the house, making in all five adults and four children, sleeping in a room about 12 feet long, $11\frac{1}{2}$ feet wide, and eight feet high. This house was ticketed 1100·3. In the adjoining house, with 1292 cubic feet, we found nine adults and one child, most of them sleeping on the floor. From this we went to 183 New Wynd, and entered a common lodging—in an upper room of which, with about 1600 cubic feet, were eight men and women. We now proceeded to 30 Princes Street, where we found the most dreadful instance of overcrowding we had yet witnessed. The attic floor contained several one-roomed dwellings, to reach which, as the passage is at the side of the house, where the roof is low, we had to stoop and grope our way. The centre room, lighted from the roof, was ticketed 700·2; it was kept by an old woman, who had nine lodgers, so that actually ten human beings were crowded into a space insufficient even for two. It will assist the reader to realize this if he will imagine his parlour or dining-room, say 20 feet long, 16 feet wide, and 10 feet high, inhabited by forty-five persons. I had felt the passage to be badly ventilated, but the effluvia in this apartment was so abominable, that I left the obliging inspectors to complete the enumeration of human beings, and retreated to the door, where now, by contrast, the outer air seemed sweet and pure. Another house, ticketed 1555·5, had eight adults and four children; and the one adjoining, consisting of a room and kitchen, presented, perhaps, the saddest sight of all—four adults and one child occupied the kitchen, containing about 1800 cubic feet, while the room, a mere closet, about 12 feet long, 6 feet wide, and 8 feet high, equal to 576 cubic feet, contained three adults and six children, each person having thus only about 65 cubic feet of air space. One of the

children was dying of consumption, and not expected to live over the night; the father, too, was fast hastening to the grave from the same cause.

We next went to 70 Old Wynd, and found one house, ticketed 1760·5, with eight adults and two children; another, 2120·7, with thirteen adults and two children; another, 2246·7, with ten adults and two children; and then a very bad one, ticketed 1760·5, with ten men and women and six children. Finally, we entered a long close, 37 High Street, and, among other houses, visited one ticketed 820·2. This miserable dwelling, utterly unfit for human habitation, and which most men would think unfit for a stable, was without window or opening of any kind, except the door. Here we found four adults and one child. I need not give further instances of the dreadful overcrowding which we found almost everywhere; suffice it to say, that of forty-seven houses, only four had not more than the allowed number of occupants. It is worth noting that seven of these houses were unticketed, *all of which were excessively overcrowded*.* I was particularly struck with the fact

* Since writing the above, I observed, in the *Glasgow Herald*, that at a meeting of the Police Board, held on 24th May last, a return was presented by the Chief Constable of the number of ticketed houses visited during the quarters ending 30th January, 1869, and 30th April, 1869, in which it is stated that "the total number of houses inspected on 30th April was 25,614. Of these there were found overcrowded, 2414; empty, 315; not overcrowded, 22,885." This appeared to me a very remarkable statement; and on examining the returns for the Central District I was still more surprised to find the following summary:—

Overcrowded, ...	540
Empty, ...	128
Not overcrowded, ...	6,352
	7,020

In looking over the various sheets, I was struck with the apparent inaccuracy of many of the returns, such as the following:—

	Dwellings not Overcrowded.	Dwellings Overcrowded.
8 Drygate, ...	90	3
47 Rottenrow, ...	41	1
44 and 64 Havannah, ...	30	0
8	8	0
97 New Vennel, ...	34	1
3 Broad Close, ...	8	0
6	6	0
14	6	0
19	18	0
93 High Street, (the notorious Piper's Close,)	85	0
26 Laigh Kirk Close, ...	6	0
71 Prince's Street, ...	22	2
	354	7

I resolved to visit some of those places, to ascertain the true state of

that, amidst the greatest destitution and want of domestic comfort, there was not a single complaint of insufficient accommodation.* This seemed to me a melancholy feature in the condition of the

matters. Accompanied by the Sanitary Inspector and the Inspector of Police, whose services I had been favoured with on a former occasion, I visited—between the hours of 11 P.M. and 4 A.M.—133 of those dwellings,—all of them entered in the returns as not overcrowded. The following was the result:—

						Not Overcrowded.	Overcrowded.
8 Drygate,	...	...	...	...	...	8	3
47 Rottenrow,	...	...	...	...	...	7	7
44 and 64 Havannah,	...	...	...	...	...	13	8
8	...	...	...	...	...	4	4
97 New Vennel,	...	...	...	...	...	5	4
3 Broad Close,	...	...	...	...	...	6	2
6	...	...	...	...	...	2	5
14	...	...	...	...	...	2	4
19	...	...	...	...	...	12	6
93 High Street,	...	...	...	...	...	8	6
26 Laigh Kirk Close,	...	...	...	...	...	1	3
71 Prince's Street,	...	...	...	...	...	9	4
						77	56

Many of the above localities are well known to the sanitary and medical staff as hot-beds of disease; and yet from the official returns, out of 361 dwellings, apparently only 7 were found overcrowded, while on the night of my visit 56 were overcrowded out of 133. Such official statistics are worse than useless—they are misleading. In justice, however, to the police, it is right to say, that it appears almost physically impossible that, in addition to their other onerous duties, three men (for that, I believe, is the number in the Central District) should efficiently inspect 7020 houses once a-quarter. But, even if it were possible to prevent all overcrowding in those houses that are ticketed, the result would not prove a diminution of this evil, unless it could be shewn that in those localities the number of dwellings had been increased, or that the population had diminished, for at present only houses—other than common lodging-houses—with from 700 to 2000 cubic feet, are ticketed, all above that size are unticketed, and consequently exempt from police surveillance. In many instances, those unticketed dwellings, already much overcrowded, become still more so in proportion as the crowding in ticketed houses is prevented. The evil is thus, even by the most active exertions of the police, only being changed from one set of houses to another.

* In the Poor Law Commissioners' Report on the sanitary condition of the labouring population, I find the following illustration of the unresisting manner in which the very poor submit to the wretchedness of their lot:—"In the year 1836," says one of the medical officers of the West Derby Union, "I attended a family of thirteen—twelve of whom had typhus fever, without a bed, in the cellar, without straw or timber shavings—frequent substitutes;—they lay on the floor, and so crowded that I could scarcely pass between them. In another house I attended fourteen patients; there were only two beds in the house. All the patients lay on the boards, and during their illness never had their clothes off. I met with many cases in similar conditions; yet amidst the greatest destitution and want of domestic comfort, I have never heard, during the course of twelve years' practice, a complaint of inconvenient accommodation." And corroborating this, Dr. Southwood Smith, in his evidence before the Health of Towns Commission in 1844, said, "The classes which live in the most wretched hovels complain the least of their condition, which will never be bettered until the more instructed interfere to improve it."

poor people who live in those houses, as shewing how far humanity may become degraded and lost to a sense of its degradation. I was also struck with the number of those who seemed to have bad colds, many of them coughing incessantly. Nor is this surprising. During the night those overcrowded rooms become close and hot; while early in the morning—often in inclement weather—the inmates, too frequently thinly clad, have to turn out to their daily work. A characteristic of those overcrowded houses that I shall not readily forget, was the peculiar effluvia which more or less pervaded them. It seemed as if the air was laden with impurity, and I no longer wondered that the death-rate in this city should be excessive; while the depressing influence of such an atmosphere, lowering the nervous energy of those who come under its influence, made me understand, and, indeed, to some extent sympathize with them, in that craving for stimulants which drives them to the public-house.*

When it is considered that pure air is even more necessary than food for maintaining health, and that each individual requires a daily supply of from 500 to 600 cubic feet, it can easily be understood that if vitiated instead of pure air be supplied to a man, there is every probability of his dying before his time.† Bad drainage, overcrowding, and want of ventilation, all contribute to produce *atmospheric impurity*, which induces disease, particularly fever in all its varieties, and so deteriorates the general health and physical condition of those subject to its influence, as to render them susceptible to the attacks of nearly all diseases, particularly those affecting the organs of respiration; hence the large proportion of deaths from consumption and acute diseases of the lungs. We know that the great mortality in this city does not arise from want

* It is scarcely necessary to adduce evidence to prove, that the physical surroundings of a man have a certain influence on his moral character and social condition. Dr. Southwood Smith, before the Health of Towns Commission, said, "The wretched state of his house is one of the most powerful causes which induces a man to spend his money on strictly selfish gratifications. . . . A filthy, squalid, unwholesome dwelling, in which none of the decencies common to society, in even the lowest stage of civilization, are or can be observed, tends directly to make every dweller in such a hovel, regardless of the feelings and happiness of each other, selfish and sensual." And again, referring to overcrowding in a particular workshop, he says, "This state of the place produced a very depressing effect on the energies of the workmen. The natural effect of the depression was, that they had recourse to drink as a stimulant,—gin being taken instead of food. I should say, *the greater part of the habit of drinking* was produced by the state of the place of work. . . . The closer the ventilation of the place of work, the worse are the habits of the men working in them."

† See Appendix.

of pure water, for of that we have an abundant supply; apparently it does not arise from pauperism, for while the death-rate in towns is much greater than that in country districts, Sir John M'Neill recently stated in his evidence before the Scotch Poor Law Commission, that, in proportion to the population, the number of paupers is less in the former than in the latter; and that our high death-rate is chiefly caused by the evils to which I have referred, is evident from the fact, that there are certain localities in this city, well known to medical men, from which *fever is rarely absent*, in which *overcrowding always prevails*, and where, year after year, the mortality is excessive.

I am indebted to Dr. M'Gill, surgeon to the police force, for the following very interesting information; and as the "overcrowded" or "fever" districts referred to are not confined to a limited area, but embrace a population of 71,681, it is sufficient to prove that there is a point in density of population which cannot be exceeded with impunity, and which, if exceeded, produces disease and death:—

Death-Rate for City.			Death-Rate in Overcrowded or Fever Districts. Pop. 71,681.			Death-Rate in Blytheswood District.
1865.....32·8	...	...	42	...	...	19
1866.....29·8	...	...	37	...	...	19
1867.....28·8	...	...	34	...	...	19
1868.....30·7	...	...	38	...	...	19

From this it appears that last year the average death-rate in Glasgow was a little over 30 per 1000. In Blytheswood district it was nineteen, or not much higher than in country districts; while, in the overcrowded or fever districts—for these seem almost synonymous terms—it was 38.

Another evil which contributes, although in a lesser degree, to produce that high death-rate which has given Glasgow a bad pre-eminence, is, that the houses in the overcrowded districts are built so closely together as in many cases to admit the least possible amount of air and light* by which human existence can be

* The influence of *light* on health, it appears to me, has not hitherto been sufficiently appreciated. The following interesting statements shew the importance of having a sufficiency of light in every apartment inhabited by human beings:—

Dr. Ward, in his evidence before the Health of Towns Commission in 1844, said: "During a practice of 30 years in a densely populated neighbourhood, my attention has been repeatedly drawn to the influence of light, not only as the most efficient means of preventing disease, but likewise as tend-

sustained. The reader will best realize this when I state, that in four of the most densely-peopled districts in Edinburgh there are 45,030 persons crowded together at the rate of 166,900 per square mile; and if we take the worst of those districts, we find 11,636 persons concentrated in the ratio of 225,280 per square mile. As regards London, it was stated before the Health of Towns Commission in 1845, by Mr. Farr, in noticing the extraordinary density of population in a small portion of that city, where there are nearly 243,000 inhabitants to a square mile, that this is "the greatest density attained in the heart of English cities." How does Glasgow compare with this? I find that the City Improvement Scheme embraces an area of 428,979 square yards, with a population of 51,294, which gives a ratio of 370,387 to the square mile; but if we take five of the most densely crowded blocks, including parts of High Street, Saltmarket, and Bridgegate, we find an area of 51,350 square yards, with a population of 10,104, or at the rate of 609,506 inhabitants to a square mile;—in other words, the population of those unfortunate districts is nearly three times as closely packed together as the inhabitants of the most crowded parts of London or Edinburgh. When Mr. Heywood, city surveyor of London, visited Glasgow a few years ago, he said, with reference to the overcrowding in the districts to which I have referred, that he was unaware of anything like it in any city in Europe. With houses placed together almost as closely as they can be built, and human beings crowded within them at night almost as closely as they can lie, is it not surprising that the mortality is not even greater than it is? Is it not to be wondered at that there is any decency left among people so huddled together? ing materially to render disease milder when it occurs, and more amenable to medical and other treatment."

Dupuytren, a celebrated French physician, relates the case of a lady whose maladies had baffled the skill of several practitioners. This lady resided in a dark room (into which the sun never shone) in one of the narrow streets of Paris. After a careful examination, he was led to refer her complaint to the absence of light, and recommended her removal to a more cheerful situation. This change was followed by the most beneficial results; all her complaints vanished.

Sir James Wylie has given a remarkable instance of the influence of light. He states that the cases of disease on the dark side of an extensive barrack at St. Petersburg were, uniformly, for many years, in the proportion of three to one to those on the side exposed to strong light.

Dr. Andrew Combe, in his *Physiology of Health*, says, "The development of man is impeded when the free access of solar light is prevented; and here, undoubtedly, lies one of the chief causes of the excessive infantile mortality in cities. This mortality decreases rapidly as the children grow and are able to run out of doors. The solar influence and the fresh air then begin to counteract the bad effects of their close and dark abodes."

or is it strange that public-houses should be so much frequented by the poorer classes? But, bad as the state of things was three years ago, when the statistics to which I have referred were made up, it is now considerably worse. Within the last nine months 111 families have been dislodged by the City Improvement Trustees; while it is estimated, by one who is well qualified to form an opinion on the subject, that from 1200 to 1600 families have been turned out of their houses owing to the formation of the Union Railway; * while, from the same cause, many workshops, warehouses, &c., have been removed to other parts of the city, in their turn displacing probably 100 additional dwelling-houses. These demolitions, of which a large proportion has been in the area referred to, have led to a competition for houses, and in many cases to an advance in rents, which, again, has had the effect of driving many poor people to take lodgings in houses already overcrowded. Merely to prevent this overcrowding *from going beyond what it was previous to the operation of those extraneous causes*, would require about 1600 additional houses, (inadvertently stated as 1700 in my letter of 4th May last;) while the natural increase of population, which may be estimated at 8000 per annum,† and

* I have since been informed by the obliging Secretary of the Glasgow Union Railway Company, that at the date at which the above was written, 989 dwellings had been taken down in the course of their operations. As, however, in many instances, houses of two and three apartments were occupied by as many families, he assumed six as being the average number of inmates in each dwelling,—thus bringing the number of individuals unhoused up to 5934, or somewhat more than the total occupants of 1200 houses, if taken at the number ascertained at last census of 4·72 to a family.

† According to the reports of the City Chamberlain, the average annual increase of population during the five years ending 1866, was 8500; nor have we any reason to believe that it was less in the two following years; *apparently* the increase in 1867 was scarcely 2000. As, however, the annual increase of population is estimated by the increased number of occupied dwellings, multiplied by 4·72, (the ascertained family number at last census,) it is obvious, that the diminished supply of houses on the one hand, (only 1763 unoccupied in 1867, against 6703 in 1862,) and the demolition of so many houses by the Union Railway, &c., on the other, rendered this mode of calculation no longer reliable. The City Chamberlain, in his report for that year, says, and I think most truly, in explanation of this anomaly: “Our present apparent position is to have had our population increased during the year by about two thousand, in place of by ten or eleven thousand souls. It may be that social derangements have much to do with this apparent deficiency, and that our population may after all prove to have retained a portion of this seemingly lost ground; but the supposition involves a painful theory. A number of dwellings have been removed by railway and other operations, and these have been naturally chiefly of a humble class, and low value. May it not be that many of the persons thus dispossessed have merely huddled closer together in some neighbouring locality? . . . thus increasing the average number which constitute a household, without appreciably increasing the number of the inhabited dwelling-houses.”

the usual displacement of dwellings which annually takes place to make way for shops, counting-houses, &c., would require the erection of at least 1800 houses per annum. What, then, is the state of the house supply? I find, on consulting the statistics annually prepared with so much care by the City Chamberlain, that in

1862 there were 6703 unoccupied houses.

1863 ,, 6536 ,, ,,

1864 ,, 4828 ,, ,,

1865 ,, 3251 ,, ,,

1866 ,, 1763 ,, ,,

1867 (no information for this year).

1868 there were 1682 unoccupied houses.

When we bear in mind that there are upwards of 93,000 inhabited houses in Glasgow, 1682, or less than two per cent., must appear a very small number to have been unoccupied; more especially as, doubtless, many of them had been newly built. Probably at no time has there been so limited a number of unoccupied houses in Glasgow in proportion to the population. And now, as to the number of dwelling-houses recently erected, I find, that during the two years ending 1st December, 1868, 4110 were sanctioned by the Dean of Guild Court; but as, according to the above estimate, 1600 were required to replace those recently demolished, and 1800 for each of the two past years, to meet the natural increase of population,—making in all 5200 dwellings,—it is evident, that at the beginning of this year there was a deficiency to the extent of upwards of 1000 houses, to make matters no worse than they were in 1866. Since the commencement of this year there has been a large amount of building; but even if the houses recently erected, and now in course of erection, were more numerous than they are, they would be of little avail, as, generally speaking, *from their rental they are beyond the reach* of the dwellers in the “fever or overerowed districts;” and, unless otherwise provided for, we can only anticipate for our poorer population increased overcrowding, increased mortality, and disregard to all the decencies of life, until they sink—as they are rapidly doing—into a state of helpless and hopeless degradation. I have gone carefully over the rents paid by people inhabiting houses in the Tontine, Blackfriars’, and Old Wynd, districts, and find, that of 2784 houses, 1586 consist of one apartment, the rents being from £3 to £5 per annum; 635 are two-roomed dwell-

of Arts, in 1864, and other sources, I find that from fifteen to twenty societies, or individuals, have erected model houses for the working classes; twelve of these (I have no information about the others) have erected dwellings sufficient to accommodate nearly 15,000 individuals. They are generally occupied by the class that live in the purlieus around those buildings; and, having visited many of them three years ago, I can testify to the decent-looking appearance of the inmates—their improved material condition having exercised a beneficial effect on their health and general well-being. The majority consisted of persons who depended upon casual work, and whose earnings averaged from 12s. to 14s. per week. In most of those buildings there is what in France is known as a *concierge*, or porter,—generally an intelligent man, not unfrequently a half-pay soldier,—who occupies a room on the ground-floor. He lets the dwellings, collects the rents, and takes care that the property is kept in good order. One of the conditions on which these houses usually are let is, that the rent be paid weekly; another, that no part shall be sublet, or any lodger taken in, except by permission of the committee or proprietor. Some of those undertakings have been successful financially; others, in this respect, have failed. Many of them have been built too expensively; but in a sanitary point of view, they have all been most successful. At a meeting of the Society for Improving the Condition of the Labouring Classes, Lord Shaftesbury said, that the death-rate in their numerous dwellings—with an average population of 1700—was only 16 per thousand; and it is stated by a competent authority, that the average rate of mortality in the model dwelling-houses throughout London has not, on an average, exceeded this rate; while in the districts in which those houses are generally situated, the average has been 27 to 28. In other words, by attention to sanitary laws, these abodes have been rendered as healthy as those in the most favoured parts of London.

I shall now venture to shew that if, as a community, we cannot altogether remove, we may very materially reduce the evils resulting from the causes referred to. At present the Police Act of 1862, so far as regards overcrowding, is practically almost a dead letter; the police find it impossible to give effect to its enactments, for if they were to attempt to do so, they would have to summon half the tenants in such localities as Bridgegate, High Street, and Prince's Street, before the Magistrates, and turn thousands of poor

people into the streets; and yet no real improvement in the health of the population can be expected until the provisions of this Act are faithfully carried out. The people want pure air, *and nothing but additional house accommodation, and that at rents somewhat similar to those now paid by the poorer classes*, will materially lessen our great mortality, and enable the magistrates to prevent the open violation of their own laws. For every class above that of the common labourer there is, as a rule, no lack of house accommodation; it is only when we come to their abodes that the relation between supply and demand fails. There is a general prejudice against indigent or necessitous tenants, and most people who have money to invest do not care to have the trouble connected with this class of property. We know from past experience that capitalists will not provide the necessary accommodation, while all that philanthropy might do in this respect would be a mere drop in the ocean. As the whole community suffers directly or indirectly from the evils resulting from overcrowding, the whole community should endeavour to remedy those evils, and by the Glasgow Improvement Act of 1866 *they have full powers to do so*. The preamble of this Act runs thus:—"Whereas various portions of the city of Glasgow are so built, and the buildings thereon are so densely inhabited, as to be highly injurious to the moral and physical welfare of the inhabitants, and many of the thoroughfares are narrow, circuitous, and inconvenient, and it would be of public and local advantage if various houses and buildings were taken down, and those portions of the said city reconstituted, and new streets were constructed in and through various parts of said city, and several of the existing streets altered, and widened, and diverted, and that in connection with the reconstitution of these portions of the city provision was made for dwellings for the labouring classes who may be displaced in consequence thereof." And under section 20—"The Trustees (Lord Provost, Magistrates, and Council) may, on any lands acquired by them under this Act, erect and maintain such dwelling-houses for mechanics, labourers, and other persons of the working and poorer classes as the trustees from time to time think expedient, and let the same when so erected and fitted up to such mechanics, labourers, and other persons of the working and poorer classes, at such weekly or other rents, and upon such terms and conditions as they from time to time think fit, or the trustees may sell and dispose of the same." And further, under section 28—"It shall be lawful for the Trustees to borrow on bond

or mortgage any sum not exceeding one million two hundred and fifty thousand pounds." If, in the first instance, one-third of this sum, or say £400,000, were devoted to building suitable dwellings for the poorer classes, I have no hesitation in saying that an appreciable diminution would be effected in our normal death-rate, *and that at no expense whatever to the community.*

A few years ago I had occasion to make some inquiry into the construction of such dwellings, and from recent experience, corroborated by reliable authority, I believe that two-roomed, light, bright, cheerful-looking dwellings—constructed on what in London is known as the open-gallery principle, which appeals to the self-respect of the occupants, by giving each dwelling the highest attainable individuality of character—the ceilings 10 feet high—and no working man's house should have less, as height of ceiling tends to prevent the possibility of overcrowding—each dwelling containing from 2000 to 2400 cubic feet, with a thorough system of ventilation, can be erected at a cost not exceeding £75 or £80,—including cost of ground at 20s. per square yard—and would give ample accommodation for a man, his wife, and four or five children; and if let at 2s. per week, would yield a gross return of $6\frac{1}{2}$ per cent.: as the Corporation can borrow at from 4 to $4\frac{1}{2}$ per cent., the difference would more than suffice to pay water rates, taxes, and all other charges. In such houses the rents are certain, as they are collected weekly. Experience elsewhere shews, that when improved dwellings are offered to the poorer classes at rents similar to what they pay for inferior houses, they gladly avail themselves of them. The sum of £400,000 would erect 5000 such dwellings, with sufficient accommodation for 25,000 persons, (giving each adult 500 cubic feet of air space.)

What effect would the removal of such a number of human beings have on the "overcrowded or fever districts" of Glasgow, with an estimated population of 71,681, and during the last four years an average mortality of nearly 38 per 1000? In the model dwellings erected in London the mortality was reduced to 16 per 1000, while in the immediate vicinity it continued at 27 to 28. Is it too much to anticipate that the mortality among the 25,000 occupants of such dwellings as I have referred to would be reduced from 38 to 24? while we might reasonably look for a considerable diminution in the death-rate in the present inferior dwellings, from their being relieved, to so large an extent, from the pressure of excessive overcrowding; for we must bear in mind that it is

the last additional crowding that, by poisoning the atmosphere, more immediately causes death. Such additional house accommodation would lead to a higher appreciation of the deeneies of life on the part of the occupants; and as the moral charaeter of the poor depends greatly on their material condition, it would tend to diminish drunkenness, would lessen the demands upon our Infirmary and Fever Hospital, and would have some effect in lowering our poor rates; for it is a well-known faet, that for every ease of death there are at least seven of illness; and death and illness alike swell our poor rates. To our munieipal authorities we are indebted for a supply of pure water. It now rests with them to give a supply of what is even more essential for the preservation of human life; and in earrying out the City Improvement Act, the first great objeet should be the improvement of the condition of the people. Compared with this, the beautifying of the eity, however desirable, is a matter of mere seondary importanee. Not another house should be taken down until additional dwellings have been ereeted; and then those 364 dwellings which, in 1864, were reported upon by the Master of Works as being under the statutory size, and therefore unfit for human habitation, should be levelled to the ground, together with many others which are perfectly ineurable, and only serve as nurseries for an enfeebled population and hotbeds of disease.

What has been stated with reference to overcrowding and its evils, is fully confirmed by those who are perhaps best acquainted with this subjeet. In his reeent Report on the Health of Glasgow, Dr. Gairdner says: "At no time has there been a more urgent demand for house aeoommodation in the City of Glasgow than at present;" and, again, "the question of house aeoommodation is at the very root of sanitary reform, and all else is mere surface work." The Chairman of the Sanitary Committee said at a reeent meeting of the Poliee Board: "When he refleeted that there were at present only about one-fourth of the unoeeupied houses that there were five or six years ago, he could hardly eome to the eonelusion that there was abundant aeoommodation in the city. . . . He had all along held that overerowding had been at the root of the high mortality, and not overerowding inside of houses alone, but the overerowding of buildings upon the ground." At a meeting of the City Paroehial Board held reeently, the Inspeetor said, "he eonsidered that the prevalenee of fever was attributable to over-crowding more than to anything else." The Sanitary Inspeetor of

the Central District assures me that "he never knew overcrowding to be so great as this year." I shall only add the opinion of the Medical Officer of Health of the City of London with reference to the evils of overerowding:—"Without doubt," he says, "overcrowding is the worst of all the unwholesome influenees with which you have to deal; and until it is eorrected, you will never be secure from those outbursts of disease which appear to set your sanitary measures at defiance." We cannot ignore, nor is it wise to shut our eyes to a state of things which, even twenty-five years ago, the celebrated Dr. Southwood Smith declared to be worse in Glasgow than in the worst parts of London; and which, in his last quarterly return, called forth the following remarks from the Registrar General with reference to the excessive mortality in Glasgow:—"Why cannot the administrative ability which has been suceessful in commanding a pure water supply, be as suecessfully applied not only to the demolition of old tenements, but in the erection of new constructions and improved house accommodation for the poorer classes, and also in enforcing the law against over-crowding?"

This question of overerowding has ceased to be one of mere money—it is now a question of life and death; and therefore specially calls for the active interference of our eivic authorities. Even an enlightened selfishness should induce us—if not animated by any higher motive—to endeavour to remedy evils which are disereditable to us as a civilized people; and, with such powers as we possess, if we do nothing, the poor may, from out of their dark wynds and pent-up closes, mock at our refinement and Christianity, and justly complain that we have left them alone to sink lower and lower in the scale of humanity.

It is, however, to be hoped that the City Improvement Commissioners will earnestly consider the best mode of proeeeding, with as little delay as possible, to build houses adapted for the poor, well drained, and well supplied with water, light, and air. As landlords, they will have full power to enforce whatever rules and regulations they may think necessary; and by erecting such buildings *near those localities where labour is in demand*, and where ground can be obtained at a moderate price, I believe they will not only find the revenue sufficeient to meet all charges, but they will consult the convenience of the labouring poor—a large proportion of whom, I find on inquiry, have at present to travel a considerable distance to their places of labour. *At all events, let the experiment be fairly*

tried; let such dwellings as I have referred to be erected for the accommodation of, say 200 families, or about 1000 persons. This can be done at a cost (including ground) of less than £20,000; and in order to test how far suitable accommodation conduces to health, I would venture to suggest that this first experimental block of "Corporation buildings" be erected in one of the most crowded central localities: and it is not unreasonable to anticipate—from what has resulted elsewhere—that the mortality will not exceed 24 per 1000, instead of from 38 to 42 per 1000, as at present. Nor will Glasgow be the first community to make such an experiment—the Corporation of London a few years ago undertook the construction of several large piles of buildings, adapted for the occupation of persons who had been ejected from their dwellings owing to the formation of some new streets. The following interesting information is from the report of the Improvement Committee, dated 11th March, 1869:—"The results of three years fully bear out the estimate given in our report of 1867, of an annual return of over £4 per cent. upon the capital outlay. The design of the Corporation in erecting the buildings has been to assist the labouring classes to obtain healthy separate houses—the sanitary condition of the buildings is therefore a question to which great interest must attach; and upon this point we have been favoured by the Registrar-General with a return of the deaths registered in Corporation buildings during the three years ending on the 30th June, 1868. A census, taken in January, 1868, shewed the population in the buildings to be 872; and the average number of deaths appearing by the return to be $19\frac{1}{2}$ per annum, the result is a death-rate of 22 per 1000. This must be looked upon as highly satisfactory. The general death-rate of the metropolis last year was 23 per 1000, and in a small property not far from the buildings the death-rate in three years to June last averaged 31 per 1000. These houses, though small, were stated to be tolerably well built. In another property of a very bad description the death-rate is reported to have averaged last year 65 per 1000. In conclusion, we have the satisfaction to state, that the entire arrangements appear to conduce to the comfort of the several tenants, and to carry out the objects contemplated by the Corporation in the erection of the buildings." I have only to add, that while much has been said, and said most justly, with reference to the evil effects resulting from the impurity of our river, the noxious exhalations from some of our manufactories,

as well as the highly objectionable state of the water cisterns in many dwelling-houses,*—these can only be regarded as auxiliaries; *the supreme evil*—all the others being comparatively insignificant—*is overcrowding, or the breathing of a poisoned atmosphere.* This conclusion is fully supported by the highly competent authorities quoted in the Appendix.

As a community, we have not yet been sufficiently roused to the surpassing value of health, and are but beginning to realize the fact, that this waste of human life which is daily going on around us, is not only a great calamity, but very bad economy; and so far as its causes are understood and can be remedied, it is a great and cruel injustice.

* It is interesting to note, that in those localities where overcrowding chiefly prevails, and where the death-rate is highest, water-cisterns are almost unknown, the supply of water for the dwellings of the poor being almost invariably drawn direct from the main.

APPENDIX.

ALTHOUGH, generally speaking, people willingly assent to the proposition, that impure or vitiated air is prejudicial to health, they are not sufficiently impressed with the absolute necessity of pure air to the well-being of the animal economy. Government commissions and private individuals have, by their investigations, shewn, that the leading causes of the high death-rate, and high disease-rate, (for they go together,) in our great cities, may be traced to the overcrowded condition of the houses of the poorer labouring classes. The importance of this question must be my apology for quoting at considerable length the opinions of several distinguished writers.

The celebrated DR. ANDREW COMBE, in his admirable work on the Physiology of Health, says: "Before entering the lungs, the atmospheric air consists of 21 parts of oxygen, and 79 of nitrogen, with a very small trace of carbonic acid: when it is expelled, its *chemical properties* are much changed, for we find on analysis, that about 5 parts out of the 21 of oxygen have disappeared. Of these 5 parts of oxygen, 4 are returned, in combination with carbon, as carbonic acid. When the same air is breathed again and again, its oxygen diminishes, while the carbonic acid increases with each successive act of respiration; till at last, from deficiency of oxygen, the air becomes incapable of sustaining life. . . . If from any external cause—such as the crowding together of many people—the air be rendered so impure that the 20 inches required for each respiration contain only *three*, instead of *four*, cubic inches of oxygen, and if the place of the absent quantity be supplied by one cubic inch of carbonic acid, it is obvious that the blood subjected to its action will be even more imperfectly oxygenated, than if only 15 cubic inches of *pure* air were admitted to the lungs. The presence of the additional inch of carbonic acid will add to the evil arising from the want of the oxygen; and hence the bad health and ultimately fatal results which have so often been produced by the continued breathing of a vitiated air, especially when the vitiation is considerable in degree. And yet how very much is this important truth practically held in contempt; scarcely a day passes in which a well-employed medical man does not meet with some instance in which health has suffered, or recovery been retarded, by the thoughtless or ignorant disregard of the necessity of pure air. . . . Everybody knows that breathing an air loaded with the exhalations of a patient suffering from

small-pox or typhus fever, frequently produces the disease; but it *needs to be inculcated* that the air is rendered poisonous by the concentrated exhalations of a number of persons in *health*, and that the breathing of an atmosphere thus contaminated is sufficient to produce fever, or some other deadly malady." The following illustration, taken from SIR GEORGE BALLINGALL'S Lectures on Military Surgery, exhibits incontestably the origin of *typhus fever* in the continued respiration of vitiated air: "In the summer of 1811 a low typhus fever broke out in the fourth battalion of the Royals, then quartered in Stirling Castle. The season was the healthiest of the whole year, and the locality about the most salubrious in the country. On investigating the causes which could give rise to so much illness, under circumstances apparently so favourable to health, the mystery was speedily solved. In one room, 21 feet by 18, sixty men had been placed, and in another of 31 feet by 21, seventy-two men. To prevent absolute suffocation the windows were thrown open during the night, from which a cold air streamed in upon those nearest to them. The natural result of this crowding was typhus fever, to which inflammation of the lungs was superadded in those exposed to the cold draughts. The two diseases together proved very fatal. Had the officers who assigned quarters to these unfortunate men been acquainted in the slightest degree with the laws of respiration, they would, I believe, as soon have thought of ordering the men to be shot, as of exposing so large a proportion of them to almost certain death from an easily avoidable disease." The simple fact added by Sir George, that "with less crowded apartments of the same barracks no instances of fever occurred," is the severest condemnation which can be recorded against them.

DR. JACKSON, a distinguished medical officer, quoted by SIR GEORGE BALLINGALL, gives precisely similar testimony. He says: "The air being contaminated by the breathing of a crowd of people in a confined space, disease is originated and mortality is multiplied to an extraordinary extent. It was often proved, in the history of the late war, that *more human life was destroyed by accumulating sick men in low and ill-ventilated apartments, than by leaving them exposed, in severe and inclement weather, at the side of a hedge or ditch.*"

DR. COMBE adds: "Many writers have been at pains to point out the actual occurrence of the evils which physiology leads us to expect from the continued breathing of *impure* air, but *the way in which the injury is done* has not been sufficiently explained or insisted on; and hence the public at large remain unimpressed with the reality of the mischief, such as I have endeavoured to set it before them. The bad effects, indeed, are often so gradual in their appearance, and apparently so unconnected with their true cause, that the prime source of the evil is apt to be overlooked. But the influence of impure air or imperfect respiration is not the less positive, or ultimately less subversive of health, from being slow and insidious in its progress. . . . What we maintain is, that *breathing an*

impure atmosphere lowers the tone of the system, and renders it liable to disease. This is an invariable consequence; but the nature of the *particular malady* which ensues depends on unknown causes, which has received the name of the epidemic constitution."

DR. EMERSON, in a paper on the Medical Statistics of Philadelphia, published many years ago, says: "Whilst upon the subject of public hygiene, we cannot restrain ourselves from noticing another consideration connected with it,—namely, ventilation, or a proper supply of pure unrespired air. By far the greatest proportion of the annual sickness, and mortality of ordinary seasons, is furnished by the narrow and confined alleys and courts existing in various parts of the town. It is common to attribute the greater mortality known to take place, under ordinary circumstances in large towns, among the poorer classes, chiefly to meagre or unwholesome food, and immoderate indulgence in strong liquors. But in this country the influence of both these causes, in the production of disease, is, in our opinion, insignificant, when compared to that of breathing air that has been previously respired, and which, moreover, is commonly charged with animal and vegetable effluvia."

DR. ARNOTT, in his evidence before the Health of Towns Commission, in 1844, said: "Our inquiries gave us the conviction that the immediate and chief cause of many of the diseases which impair the bodily and mental health of the people, and bring a considerable proportion prematurely to the grave, is the poison of atmospheric impurity."

J. TOYNBEE, Esq., F.R.S., one of the surgeons of St. George's Hospital, London, in his evidence before the same Commission, said: "Defective ventilation appears to me to be the principal cause of the scrofulous affections which abound to an enormous extent amongst our patients. I am not prepared to state that other causes may not produce this disease; but I am prepared to state, that I believe this is the greatest cause in our district. My observation is very generally corroborative of the view taken by M. BAUDELOCQUE, who, in a treatise, '*Observations sur les Maladies Scrofuleuse*,' states, that the repeated respiration of the same atmosphere is the cause of scrofula."

DR. DUNCAN, in his report on the Sanitary Condition of Liverpool, adopts similar views: "It would be a waste of time," he says, "to point out the way in which the general health is injured by the habitual respiration of contaminated air; but there are one or two diseases whose existence seems specially favoured by this circumstance. The first I shall notice is consumption. It has been observed, that wherever individuals breathe habitually impure air, and are exposed to the other debilitating causes which must always influence, more or less, the inhabitants of dark, filthy, and ill-ventilated dwellings, scrofula (and consumption as one of its forms) is very apt to be engendered, even where the hereditary predisposition to the disease may be absent."

SIR JAMES CLARK says: "There can be no doubt that the

habitual respiration of the air of ill-ventilated and gloomy alleys, in large towns, is a powerful means of augmenting the hereditary disposition to scrofula, and even of inducing such a disposition *de novo*." He further says: "If an infant born in perfect health, and of the healthiest parents, be kept in close rooms, in which free ventilation and cleanliness are neglected, a few months will often suffice to induce tuberculous cachexia,—i. e., the constitutional affection which precedes the appearance of consumption."

In referring to the evil effects of overcrowding in workshops, Dr. W. A. GUY, one of the physicians to the King's College Hospital, London, when examined by the Health of Towns Commission, made the following interesting statement:—"Forty men were employed in five rooms, containing an aggregate of 12·121 cubic feet of air, being at the rate of 303 cubic feet of air per man. Other forty men were employed in other five rooms, containing 31·549 cubic feet of air, being at the rate of 789 cubic feet per man. Of the forty men occupying the smaller rooms, and consequently breathing a hotter and fouler air, five had had spitting of blood, six were subject to severe catarrh, six complained of indigestion, two of great debility, and one of rheumatism. On the other hand, of the forty men occupying the larger rooms, and having a purer and cooler air to breathe, only one was subject to catarrh, two to indigestion, one to pain in the chest, one to nervous symptoms, one to headache, and one had varicose veins. Not one of them had spit blood."

MR. CHADWICK, in his Report on Workhouses, Schools, &c., says: "Since the attention of medical men has been sufficiently directed to the subject, the explanation has become complete of many deplorable cases of general ill-health and mortality in such places, attributed at first to deficiency or bad quality of food, or to any cause but the true one—want of ventilation."

In the First Report of the Metropolitan Sanitary Commission, the Commissioners gave it as their opinion that, "in the present state of most towns and cities, the number of persons whose constitution is enfeebled by want of food, compared with the number whose vital energy is depressed by want of pure air, is found to be an exceedingly small minority."

In the last Annual Report of the Registrar-General, Dr. FARR says: "To limit the operation of zymotic diseases, *overcrowding in towns must be absolutely prohibited*: the mere accumulation of masses of living people within narrow limits either generates or insures the diffusion of epidemic disease; as a healthy city of a limited number of inhabitants enjoys life and fulfils the destiny of its race; while a crowded, suffering, sickly, degenerated city of twice the population only drags on a wretched existence, in violation of the principles of life and the operations of nature, laws against overcrowding must be rigorously enforced. A wise humanity, involving self-preservation, is the law of every city."

With all the information which they have had on this subject, it is a remarkable thing, that communities boasting some progress in

civilization should so long have tolerated evils which they had power to remove; and that while spending large sums in endeavouring to cure disease, they should have done so little *to preserve health*; in this city alone the excess of deaths in proportion to the population, when compared with that of London, is upwards of 3000 a-year. The loss of life in even such a battle as that of Waterloo appears trifling when contrasted with this unceasing destruction of human beings.

